

**NMFS Responses to Public Comments
On the
Proposed Upper Columbia
Spring Chinook Salmon and
Steelhead Recovery Plan
September 2007**

General Comments

Appreciation and rejection of the plan:

1. *Comment:* Many commenters expressed appreciation of the work of the Upper Columbia Salmon Recovery Board (UCSRB) and others that went into writing the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (Plan). Even many very critical comments pointed out successful elements in the Plan. Those elements in the Plan that were recognized as working well include: the effort to include a wide range of interests and entities throughout the region; work to make the plan comprehensive; extension of the Entiat watershed plan by including some costs and benefits, and guidance in salmon recovery; the vision statement, which “places salmon, steelhead, and bull trout recovery in the context of protecting the natural ecosystem and its natural function;” recognition in the plan that “recovering these fish supports the social, cultural, and economic well-being of communities both within and outside the recovery region;” efforts to consider all four “Hs;” the goal to remove all high-risk factors for spatial structure and diversity; and the use of reach-specific data. One commenter even suggested that the Plan was well written.

Response: NMFS appreciates the hard work and dedication exhibited by county and tribal officials on the UCSRB and their staffs in the development of this plan. A primary goal of the UCSRB was to ensure that local interests were represented in development of the Plan and to integrate local resources into the planning efforts. The Plan provides the opportunity for the public to be involved in partnership with resource managers and to closely work with the UCSRB on Watershed Action Teams.

2. *Comment:* A few commenters voiced categorical rejection of the entire Plan. Reasons given included objections to “the partnered regional/federal process that developed the final proposed plan through the Upper Columbia Salmon Recovery Board,” perceptions that the Plan is a total waste of money because “The upper Columbia and its tributaries are near perfect now,” and disappointment that the “plan is so poorly written, with so many inaccuracies.”

Response: The Plan was developed under the guidance of the UCSRB, a body that includes a Commissioner from each of the affected counties, the Yakama Nation and the Confederated Tribes and Bands of the Colville Indian Reservation. There are no Federal representatives on the UCSRB. However, the UCSRB and NMFS worked closely to complete a recovery plan that had public input, fulfilled the requirements of the ESA, and met the needs of county and tribal governments for restoring Upper Columbia steelhead and spring Chinook populations listed

under the ESA. The technical analysis in the Plan was developed by competent scientists most familiar with the watersheds included in the Plan. These scientists described in considerable detail significant habitat problems in each watershed. To be sure, portions of the affected watersheds, in many instances by virtue of their inclusion in Federally protected wilderness, are in excellent condition, as acknowledged in the plan. It is not clear to which inaccuracies the commenters refer; in each instance where the presence of an inaccuracy has been verified, the plan has been duly edited. NMFS disagrees that the plan is a waste of money. To the contrary, NMFS believes the Plan to be the most cogent presentation of what is known of the watersheds of the Upper Columbia and the most compelling articulation of what might be done to improve conditions for salmon there. NMFS is deeply appreciative of the considerable efforts of the county officials and agency and Tribal staff who helped assemble this impressive document and is satisfied with the quality of the document. NMFS does not intend to reject the Plan.

3. *Comment:* Many commenters questioned the need for, or efficacy of, a habitat plan for the Upper Columbia based on arguments that habitat is just fine in the Upper Columbia or that the real problem with salmon populations is some combination of harvest (overfishing, Lower-Columbia fisheries, foreign fisheries using small-holed nets), pollution, sediment runoff, predators (sea lions, seals, orcas, bull trout, carp, suckers, pikeminnow, Caspian Sea terns), Hanford, ocean conditions, hatchery management, and dams. One commenter asked why it is only landowners that share the burden of salmon recovery. Another commenter suggested that if ocean cycles had been correctly incorporated into analysis, ESA listing of salmon would never have been necessary.

Response: As stipulated in the ESA, the Plan identifies all factors for the decline of the listed species, including but not limited to, harvest, pollution, sediment runoff, predators, mainstem Columbia River conditions, ocean conditions, hatcheries, and habitat. The intent of the Plan is to identify actions in all these sectors to contribute to the recovery of the listed species, and not to place the burden on one economic sector—such as landowners. The Plan further provides a monitoring component to evaluate the effectiveness of specific actions within each sector in achieving their stated objectives. This will allow refinement of actions in the future.

Natural phenomena have been incorporated into the risk analyses for the listed species. These phenomena include changing ocean cycles and anticipated climate change. The risk analyses include the possible effects of both favorable and unfavorable ocean conditions for the listed species.

4. *Comment:* One commenter suggested that the recovery plan should compare the current impact of predation to historical predation rates, and that if current rates are not above historical, predation should not be considered as a threat to salmonid populations.

Response: The Plan includes a general summary of major sources of current predation on Upper Columbia spring Chinook, steelhead, and bull trout populations. It would be very difficult to quantify specific historical predation rates. The predation summary includes brief descriptions of sources of predation that were historically present as well as predators that are relatively recent introductions. The predation-oriented components of recovery strategies provided in the draft plan are targeted on reducing the impacts of introduced species or on addressing increased

predation resulting from human-induced habitat changes – e.g, increased vulnerability of migrating smolts to northern pike minnows or Caspian terns resulting from altered conditions such as the creation of dredge spoil islands (Section 5.4).

5. *Comment:* A number of commenters suggested that there is no evidence that salmon numbers are any lower in the Upper Columbia than they were historically. One commenter said that numbers are low, and have always been low, because Upper Columbia “streams are among the most unproductive in the world.” Other commenters suggested that salmon numbers were sometimes low in pre-European times as well, or that present numbers are actually higher than historical returns.

Response: Direct counts of annual returns of naturally produced spring Chinook and steelhead to the Upper Columbia are available going back to the late 1930s. Returns of naturally produced salmon and steelhead to the Upper Columbia in the 1930s reflected the fact that habitat impacts in each of the Upper Columbia tributaries had been occurring since the late 1800s and that mainstem harvest had taken a significant proportion of the runs. Average returns of naturally produced spring Chinook and steelhead during the 1960s through the 1980s were well above the objectives stated in the Plan.

While direct counts of earlier historical numbers are not available, estimates of the aggregate level of returns of both Chinook and steelhead runs to the Upper Columbia tributaries have been generated. Mullen et al. 1992 surveyed historical accounts of individual tribal bands associated with the Upper Columbia region and estimated annual levels of harvest. Abundance of naturally produced Chinook and steelhead returning to the Upper Columbia can also be inferred from estimates of mainstem Columbia River commercial catches of spring Chinook and steelhead during the late 1800s and early 1900s (e.g., Chapman, 1968). The estimated aggregate runs to the Columbia based on the historical harvest assessments can be allocated to specific tributaries, assuming that spring Chinook and steelhead production per km of stream habitat was roughly the same as for habitat with similar characteristics in the Snake Basin. Estimates of historical returns to the upper Columbia generated by either the pre-1850s tribal harvest approach or the lower river commercial fishery approach are well above the abundance objectives incorporated into the Plan.

6. *Comment:* One commenter asked why the Plan is needed when “we already have over 100 programs, processes, and plans” that “all, in some way, deal with salmon recovery.” The commenter suggested that if the existing plans and programs aren’t working, adding one more will not change anything.

Response: The commenter is correct that there are a number of plans in the upper Columbia that “in some way deal with salmon.” However, there has not been a plan focused exclusively on the recovery of listed spring Chinook salmon and steelhead that incorporates the following three essential elements of a recovery plan listed in Section 4(f)(1)(B) of the ESA: (1) objective, measurable criteria which, when met, would result in a determination that the species is no longer threatened or endangered; (2) site-specific management actions necessary to achieve the plan’s goals; and (3) estimates of the time required and costs to implement recovery actions. The (pre-)existing plans and programs were developed for different purposes than a recovery

plan and may be working well for their intended purposes. This plan, however, focuses on recovery of listed species. NMFS has concluded that this Plan meets the requirements of section 4(f) of the ESA, and, if its recommended actions are implemented, the viability of spring Chinook salmon and steelhead will improve.

7. *Comment:* A number of commenters pointed to recent reports of record salmon returns as evidence that fish numbers are adequate and a recovery plan isn't needed. A few of those commenters stated that salmon have always come back after disaster and decline, and that declines in salmon numbers are normal. They suggested that if the plan mentioned salmon not returning in pre-European times, declines in the 1990s would be put into perspective.

Response: Annual returns of salmon and steelhead runs are highly variable from year to year. It is likely that historical returns were also highly variable, reflecting the influences of natural variations in ocean conditions and environmental variations in freshwater habitats. In the past, average productivity and abundance levels were high enough that populations were relatively resilient to these fluctuations. At any given time, a sufficient number of populations were at a high enough initial abundance that a series of low survival years would not result in extinction. In addition, when the populations were driven to below-average levels by fluctuations in annual survivals, productivity levels were likely high enough to substantially buffer the impacts of low escapements on smolt production levels. At present, the populations in the upper Columbia are at levels of average abundance and productivity that are not sufficiently resilient to those annual fluctuations in ocean and freshwater habitat survivals; that is the basis for concluding that the populations are not currently self sustaining. However, meeting the criteria provided in the Plan does not mean that the populations would need to be fully restored to historical status. The ICTRT abundance and productivity criteria levels were specifically developed to provide for the survival of a population in light of recent levels of variation in annual return rates. For example, the recovery criteria for Wenatchee steelhead are 1000 for abundance and 1.1 for productivity.

Science in the Plan

8. *Comment:* A commenter was concerned about decisions that are made in the Plan when insufficient scientific information exists. The commenter asked what is used to make decisions in those cases.

Response: While the intent of the Plan is to base all actions on locally and empirically derived information on the survival and production of the listed species, the commenter is correct in that the Plan relies to some extent on information from studies on salmon in other locations, when data on local populations were not available. The Plan lays the foundation for a rigorous research and monitoring program (depending on funds being available) to obtain data on some assumptions made in the Plan. The monitoring program will have processes to encourage adaptive management and peer review of results.

At several stages in plan development, the planners met with watershed groups to gather information and to receive feedback on the development of the actions proposed in the Plan. This

work at the watershed level is ongoing, with quarterly meetings held in each watershed to review the progress and appropriateness of the current actions underway.

9. *Comment:* A few commenters stated that best available science is fraudulent, that there is no check on conflict of interest, and that the only science was made available by the TRT, which the commenters considered to be made up of agency scientists whose top priority is the continuation of the salmon recovery industry. A reason given for the argument that the TRT is biased was that if the scientists really cared about fish they would recognize the benefits of riprap as habitat and aquifer recharge from irrigation.

Response: NMFS and the UCSRB worked hard to assure that the best science was used to develop the Plan. The technical team participating in the planning process was composed of experts familiar with the data and life history of the listed populations. The ICTRT is one of a series of Technical Recovery Teams established by the NMFS to provide scientific input into regional recovery planning efforts for listed salmon and steelhead. The ICTRT is chaired by scientists from the Northwest Fisheries Science Center and includes experts in population dynamics, conservation biology, ecology, and other disciplines relevant to recovery planning. They do not establish recovery criteria but provide viability criteria for consideration by recovery boards and NMFS. As for the benefits of riprap, the installation of rocks and boulders does provide velocity refuge for salmonids. Its placement along rivers, however, can come at significant cost. It reduces the amount of shallow water near shore habitat essential for newly emergent fish – it would do little good to provide habitat for older fish if few fish survive to use it. Riprap, depending on how it is placed, also significantly reduces (in many cases it entirely prevents) riparian functions including shade, litter fall, and food item recruitment. The 1992 Mullan report found that fish densities were greatest among riprapped stream segments where dense, mature vegetation was growing above the riprap. With regard to the question of aquifer recharge from irrigation, a recommended action was added to the recovery plan to study this further.

10. *Comment:* A few commenters pointed at the reliance of the Plan on habitat actions as proof that empirical information was not used. One commenter used a statement by the Independent Science Advisory Board (no citation provided) that it is still 10 years from having enough data to determine what actions are necessary for fish, as evidence that the Plan is not based on science. Decisions by Okanogan County not to approve the Limiting Factors Analysis for Okanogan County or the Okanogan sub-basin plan, both of which are referenced in the recovery plan, were also presented as proof that the Plan is not based on science.

Response: The Plan did use the Limiting Factors Analyses (LFA) for both the Methow and Okanogan subbasins as information sources; the Plan also used direct empirical data, where available, to identify actions necessary to recover the listed salmonids. Where direct empirical data were not available, the Plan relied on professional opinions of local biologists and stakeholders, peer-reviewed studies on other populations, and products developed through the individual watershed plans, authorized and funded by Washington State Legislature (RCW 90.82). The planning units for the Wenatchee, Entiat, and Foster Creek/Moses Coulee

watersheds accepted the LFAs for their streams, so the recovery planners used those documents to a greater extent than for the Methow and Okanogan watersheds.

11. *Comment:* A commenter argued that the use of an unpublished "Limiting Factors Report" by WDFW should be a "huge red flag to a reader of the Plan" that verifiable, relevant facts were not used.

Response: The Limiting Factors Analyses (LFAs) for the Wenatchee, Entiat, and Methow watersheds were compiled by the Washington Conservation Commission. These reports were developed in response to legislative directives under the 1998 Salmon Recovery Act (RCW 77.85). The LFAs for the Okanogan and Foster Creek watersheds were initiated and led by the Confederated Colville Tribes and Foster Creek Conservation District, respectively. The LFAs relied on the professional opinion of WDFW biologists, in addition to other local biologists from several Federal, state, tribal, and local entities. These LFAs, particularly the Methow and Okanogan LFAs, made up a minor component of the eventual recovery plan. Many other reports and plans had greater relevance to the recovery plan and were used more extensively. These reports and plans included the products developed through the Habitat Conservation Plans for the Chelan and Douglas Public Utility Districts (PUDs) and the watershed plans (and their supporting documentation) adopted for the Methow, Entiat, Foster Creek/Moses Coulee, and Wenatchee subbasins.

12. *Comment:* A commenter disagreed with the use of formulas and "number manipulations." The commenter suggested that the use of the "geometric mean" of returning salmon numbers instead of the actual annual numbers skewed the results toward extinction.

Response: NMFS considers the geometric mean of viable salmonid population (VSP) parameters (particularly abundance) to be a more meaningful indicator than the arithmetic mean, when considering the status and trend of the listed populations. The geometric mean is less sensitive to wide fluctuations in numbers (as is often found in escapement to streams) than the arithmetic mean. The "actual annual numbers" of abundance were used in all calculations. Depending on the particular year, a single-year count would indicate a very low—or very high—abundance, and therefore could produce an inaccurate interpretation of the data.

13. *Comment:* Three commenters expressed concern that the use of the Ecosystem Diagnosis and Treatment (EDT) and Instream Flow Incremental Method (IFM) was inappropriate because many professionals do not like those models, and because they have not been proven to apply to the habitat in the Upper Columbia.

Response: NMFS is aware that the use of EDT and IFIM can be controversial. All models have strengths and weaknesses that make it very important to explain how they have been used. The Wenatchee and Entiat Watershed Planning Units (authorized by Washington State Legislature in 1998; RCW 90.82) chose to use both the EDT and IFIM models in their watershed plans, so the recovery plan incorporated some components of those model outputs. The EDT analyses were also used in all the subbasin plans (authorized by the Northwest Power and Conservation Council's Fish and Wildlife Program) of the Upper Columbia Region. This tool was used for

specific applications in the recovery plan itself, such as the selection of preferred habitat actions in the Entiat Subbasin. The recovery plan used the preferred alternatives identified by the Wenatchee and Entiat Planning Units.

Concerns about the impact of the Plan on individual rights and property:

14. Comment: A number of commenters expressed fear of a general loss of rights, or limitations of the use of private property as a result of the Plan. Although most of those commenters referred only to an unspecified loss of rights, specific concerns identified include the taking of water rights and the closure of all steelhead fishing in the Upper Columbia. One commenter asked how landowners will be notified of planned impacts on their land. Another commenter asked about the right of landowners to decline actions on their property.

Response: The Plan states on page xvi, “This plan is to be used to guide federal agencies charged with species recovery. In and of itself, this plan is a non-regulatory document. As such, it is not intended to be nor may it serve as a regulatory document forcing landowner action.” Landowners, therefore, can decline actions on their property. As for the concern about the closure of steelhead fishing, section 1.4.4 states the commitment of the UCSRB to pursue fishing opportunities in the Upper Columbia consistent with meeting ESA obligations for listed populations. In addition, section 5.2.4 details how the selective harvest of hatchery steelhead will be used as a management tool to increase returns of natural spawners. Recreational steelhead fisheries have occurred in portions of the Upper Columbia Basin annually since 2002. They are developed after discussions between the WDFW and NMFS, which normally occur in mid-September.

15. Comment: One commenter suggested that salmon recovery efforts in the Methow subbasin should be focused on the “89 percent [of land] in public ownership.”

Response: The commenter makes a fair point that the Federal government should shoulder a more substantial share of the recovery burden. For the most part this is already the case; Federal land management practices (e.g., management of riparian zones) are generally more protective of aquatic systems than are private land management practices. Furthermore, Federal agencies including Bonneville Power Administration, Bureau of Reclamation, and NMFS have already spent substantial sums of money to help private landowners minimize their impacts on salmon and steelhead and bring their practices into compliance with long-standing environmental regulations. Finally, it is important to consider that while the Federal government owns a very large percentage of the Methow watershed, private ownership constitutes a large percentage of the lands adjacent to habitat occupied by listed salmon and steelhead. Accordingly, habitat conditions on private land are very important to the recovery of salmon and steelhead.

16. Comment: A commenter suggested that language be added to the Plan that would make any action taken as a result of the Plan, including future regulations that might be adopted by the state or counties, voluntary to property owners in the area affected by the recovery plan.

Response: While actions proposed in the recovery plan are voluntary, regulations adopted by the state or county governments are not. Language was added to the recovery plan (see section xvi) that states the non-regulatory nature of the recovery plan.

Concerns about the economic impacts of the Plan:

17. Comment: A number of commenters expressed concern that the recovery plan would have negative impacts on the local economies in the Upper Columbia. Changes in property values, impacts on water rights, impacts on public works projects, disproportionate economic burdens on some more than others, impacts on custom and culture, and impacts on the cattle, logging, orchards, and ranching industries were all identified by commenters as concerns.

Response: These concerns are part of the reason that the UCSRB was formed, as the local elected officials wanted to ensure that the Plan addressed the economic and social needs of their constituents in the Upper Columbia region. The perspective of the UCSRB and NMFS is that this Plan, if developed at a local level, will provide a higher likelihood of regulatory relief, an increased likelihood of funding for actions to contribute to the recovery of the listed species, and a streamlining of permitting under the ESA. All these factors will contribute toward economic vitality in the Upper Columbia region.

The recovery plan's preamble states, "This plan is to be used to guide federal agencies charged with species recovery. In and of itself, the plan is a non-regulatory document. As such it is not intended to be nor may it serve as a regulatory document forcing landowner action."

18. Comment: A commenter asked for a more rigorous economic analysis that would better depict the "plan's negative impact on agriculture."

Response: As required in the Endangered Species Act, the Plan identifies the cost of implementing the actions required to recover the listed species. At the request of the UCSRB, the Plan also provides an analysis of the economic contribution of agriculture to the region. This information is provided in Appendix K. The Plan also establishes an "implementation schedule" (Appendix P) that establishes a means to consider social and economic issues for each habitat action considered in the Plan. These issues were reviewed by stakeholders from each subbasin prior to inclusion in the Plan. As a counterpoint to this comment, some commenters believed that the Plan would promote economic benefits to the Upper Columbia Region because of the improved regulatory and permitting certainty.

Comments about the planning process

Concerns that NMFS has significantly changed what was thought of as a "final" local plan, and somehow subverted or taken over the local planning process:

19. Comment: Four commenters expressed concern that in June 2006 NMFS took what was considered locally to have been a final plan as of December 2005, and extensively rewrote it. The commenters argued that the revisions were a deviation from the process that had been

explained to them by NMFS, and represented the local process being taken over. One commenter asked why “the rules” were not laid out from the beginning if the revisions occurred because required aspects of the plan were not present.

Response: In 2003, the UCSRB was contracted by the GSRO to develop a recovery plan that the NMFS would use to fulfill its requirements under the ESA. The UCSRB organized a technical team to write the recovery plan and requested a public review three times during its development. The final draft recovery plan was submitted by the UCSRB to NMFS in December 2005. However, as stated in the transmittal letter from the UCSRB, the recovery plan had several deficiencies that still needed correcting. Between December 2005 and July 2006, NMFS proposed modifications to the Plan that addressed the deficiencies stated by the UCSRB and incorporated additional elements deemed essential for an ESA recovery plan. NMFS did not “rewrite” the recovery plan, but made additions that clarified technical, policy, and administrative concerns.

Suggestions that the planning process was never local:

20. *Comment:* We received a number of comments about the local nature of the Plan. A few of those commenters argued that calling the document a local plan is a farce: that it is a “top down document written by bureaucrats who snicker at public comment.” One commenter asked why there is no list of authors if the Plan was written by “locals.” Another commenter suggested that the inclusion of “a small group of elected officials and agency staff” is not adequate public participation.

Response: The primary authors are listed on page xiii of the Plan. The UCSRB went to great lengths to make sure that the public was included in stages during development of the Upper Columbia Recovery Plan (see appendix N). The UCSRB solicited public comments on three separate occasions, and the NMFS solicited public comments through a formal Federal Register Notice (FRN) process. The NMFS FRN was 60 days (September 29, 2006 through November 28, 2006) and was continued for another 60 days (through January 29, 2007) at the request of the public. The Plan was edited after each set of public comments.

Concerns that the planning process was unfair:

21. *Comment:* We received some comments that the planning process was not fair. An example given was that many meetings were held in East Wenatchee “for the convenience of the multi-agency bureaucrats working on the plan.” A few commenters hinted at “irregularities” in the planning process.

Response: The commenter is correct in pointing out that a majority of the meetings were held in East Wenatchee. Meetings were held at this location as a more central location for a majority of the policy and technical personnel. However, several meetings were also held in Okanogan County for the primary purpose of public involvement. Public outreach (appendix N of the Plan) included providing a Fishline Newsletter, email updates to a large list of the public, public

meetings, and media coverage (ads, announcements, radio spots. The three counties on the UCSRB developed similar public participation plans that were customized for the unique qualities of each county. These plans were designed to allow the community to learn about, and participate in, the processes to discuss documents and activities and elicit feedback from stakeholders regarding the design and implementation of the Plan.

Populations:

22. *Comment:* One commenter disagreed with the ICTRT, suggesting that designated populations were too small. The same commenter, though, suggested that the Wenatchee Chinook population might be too large, that historically there might have been a multiple independent population structure.

Response: The language in sec. 2.3.1 fairly accurately captures the definitions of independent populations used by the ICTRT (in fact by all of the TRTs). That language recognizes the relative nature of the ICTRT definition of an independent population. The individual populations defined within each ESU are linked to one another via some level of straying and exchange. The major and minor spawning areas that were defined within each population illustrate the hierarchical population structure of these salmonids. Based on current analyses, the stray rates were low enough that the major populations met the criteria as independent populations. Section 2.3.1 also includes a separate description of the population structure used for bull trout. While the two descriptions are based on the same biological principles, they are different in terms of scope and terminology, largely reflecting real biological differences in the species. In each case this section includes references to technical documents that provide more background and descriptions of the population definitions.

Crab Creek:

23. *Comment:* A few commenters disagreed with the decision not to include Crab Creek. The commenters did not consider key information on the Crab Creek population being released too late as a valid reason not to plan for recovery of that population.

Response: The Plan only generally addresses recovery of steelhead in Crab Creek (see section 1.3.6 of the Plan). The Plan recognizes that the Upper Columbia steelhead DPS would be at a lower risk of extinction with a viable Crab Creek population. However, the Plan concludes that the Upper Columbia steelhead DPS may be recovered without attaining the 95 percent probability of persistence for the Crab Creek population, based on the possibility that this population was not viable historically because of environmental conditions (e.g., intermittent stream flows and high water temperatures). The Plan will be updated in regard to the Crab Creek steelhead population through future monitoring and evaluation programs and the adaptive management process.

Dislike of EDT:

24. *Comment:* Many commenters disagreed with the use of EDT to evaluate population response to habitat conditions, with each commenter mentioning insufficient information to evaluate the models. One commenter recognized that assumptions and limitations of the model inputs and outputs were well described in Appendix F1, but still expressed concern about the difficulty of evaluating the models because of a lack of independent models and a lack of model description.

Response: Ecosystem Diagnosis and Treatment (EDT) is a system for rating the quality, quantity, and diversity of habitat along a stream, relative to the needs of a focal species such as steelhead or Chinook salmon, two listed species addressed in the Upper Columbia Plan. The methodology includes a conceptual framework for decision making and a set of modeling tools that organize environmental information and rate the habitat elements in regard to the focal species. EDT has been used extensively in the Pacific Northwest for a number of years in a variety of settings. The value of EDT is that it can identify the potential for a stream under a set of conditions such as those that occur now or those that might occur in the future. The result is a systematically based assessment of conditions and a prioritization of restoration needs.

The basis for the uncertainty related to the EDT modeling effort (and from other analyses or approaches) lies in the use of “expert opinion” to populate the model parameters when no empirical data are available. The uncertainty for each step in the logical chain from hypothesized problems to strategies to actions is addressed in the ratings of the model outputs: those outputs that are based on empirical data are given a higher rating than those based on expert opinions. Regardless, the UCSRB and NMFS provided the documentation of the data, assumptions, and outputs for the EDT models for review by stakeholders in the watershed and subbasin planning processes, and eventually in the recovery planning process. The ICBTRT also considered other life-cycle models to verify the outputs of EDT, including the SHIRAZ model developed by the Northwest Fisheries Science Center.

Comments about the public comment process/review of the Plan

Concerns about the objectivity of review of the Plan:

25. *Comment:* One commenter suggested that the Plan should be given to interested parties with adequate time to review its contents.

Response: NMFS believes that more than adequate time was provided to the public for review of the Plan. The original 60-day public review period (starting September 29, 2006) was extended an additional 60 days at the request of the public and local elected officials. In addition, the UCSRB had requested public comment on three earlier drafts of the Plan during the previous two years.

We need more time/the Plan is too big:

26. *Comment:* We received many comments during the initial comment period that the Plan was too large to be properly reviewed in the available time. A few commenters expressed suspicion that the size of the Plan was intended to conceal something. One commenter declared that the size of the Plan was “nonsense,” and another commenter went so far as to say “you should be ashamed” because of the size of the Plan.

Response: See the response to question 25. As much as we would have liked to have had a smaller document, the large amount of information and analysis required about 300 pages for the main Plan with an additional 1100 pages of appendices. The 40-page executive summary was developed to provide readers with a concise overview of the Plan.

Concern that public comments will not “really” be considered:

27. *Comment:* A few commenters suggested that the public comment was just procedural and that public comments would not be considered. Two commenters mentioned comments made in a previous draft that were not incorporated into the next draft.

Response: The UCSRB and the NMFS have taken very seriously the review and incorporation of public comments into the Plan. A total of 163 revisions were made to the text in response to public comments during the 120-day public comment period. Most of these revisions clarified technical issues and improved the syntax of the document.

Limiting Factors

28. *Comment:* One commenter suggested that the Plan lacks a detailed description of the mortalities associated with each salmon life stage.

Response: Appendix I of the recovery plan gives estimates of survival (and therefore, implicitly, mortality) of juvenile and adult Upper Columbia spring Chinook and steelhead in the mainstem Columbia River and identifies their survival and productivity rates by sector (habitat, harvest, hydropower, and hatcheries). This appendix also provides an analysis of the potential for improvements when estimates for all sectors are integrated. The recovery plan recognizes the importance of providing valid metrics for tributary productivity, which serves as the primary indicator of habitat restoration success for each subbasin in the Upper Columbia. This will be accomplished primarily by evaluating “smolts per spawner” and/or “smolts per redd.”

29. *Comment:* A commenter suggested that because instream flow is important to salmon recovery, it is important to develop quantitative relationships between stream flows and the needs of fish.

Response: Agreed. NMFS is very interested in refining the general understanding of the relationships between instream flow and survival of salmonids. The Physical Habitat Simulation Model, commonly included in Instream Flow Incremental Methodology studies, is a good tool for assessing the relationship between stream discharge and habitat quantity, but it is not a

particularly useful tool to determine at which point survival might begin to significantly decline. In the context of this plan, however, those stream and stream reaches identified as needing instream flow improvement for the most part suffer severe instream flow depletions to the point that migration is impaired or the stream is dried by withdrawals. More sophisticated flow/survival relationship tools might help determine exactly how much flow improvement is needed, but less data-intensive interim goals (enough water to wet the stream and allow migration) can be readily established with existing information and/or techniques.

30. *Comment:* We received two comments about the effect of Grand Coulee dam on salmon populations. One commenter argued that historically 85 percent of salmon returning to the Upper Columbia were destined for areas above Grand Coulee. The other commenter argued that counts at Rock Island dam after Grand Coulee dam was built were almost unchanged from counts before Grand Coulee was built, which the commenter suggested shows that very few of the fish were destined for the Kettle Falls fishery.

Response: Before the U.S. Bureau of Reclamation completed Grand Coulee Dam, Chinook salmon and steelhead used rivers and tributaries upstream of that dam site. According to Mullan et al. (1992) the Spokane River apparently produced significant steelhead runs but, with the exception of some of the smaller tributaries, no other streams upstream of Grand Coulee were important spawning and rearing areas for steelhead. Mullan et al. further note that Kettle Falls (upstream of Grand Coulee Dam) was the second most important Indian fishing area on the Columbia River before settlement. Citing historical records, Mullan et al. suggest that these were predominantly summer Chinook salmon (not spring Chinook salmon), followed by sockeye salmon. The commenter is therefore probably correct in that the spring Chinook salmon counts remained relatively unchanged as a result of the construction of Grand Coulee Dam.

31. *Comment:* One commenter expressed surprise that the plan appears to conclude that retrofitting Enloe Dam on the Similkameen River with fish passage is not necessary, in spite of the possibility that steelhead once made it past a natural barrier where the dam is presently located. The commenter suggested that the plan should either call for fish passage at Enloe Dam or defer a recommendation one way or the other until the issue about historical use of the habitat above Enloe is better settled.

Response: NMFS agrees with the commenter that there is a possibility that steelhead once made it past the natural barrier where Enloe Dam is presently located. Studies show that many miles of high quality habitat exist in the Similkameen River above Enloe Dam. If passage were provided, the upper Similkameen River could become an important area for recovery of the Okanogan steelhead population, especially if actions in other areas of the Okanogan watershed are not successful. NMFS will wait for discussions to be completed with FERC, tribal governments, and others before providing a final position on passage. Since these discussions have not been completed, NMFS has determined that passage is not a ripe action to be included in the recovery plan at this time. However, the Plan is scheduled to be updated in the future based on adaptive management, and passage may be included as a result of studies and discussions with the co-managers.

32. *Comment:* A commenter suggested that the relationships between the comprehensive list of threats and impairments in population status and associated actions are not well described.

Response: NMFS agrees that a clear relationship between threats, population status, and actions is important. We believe that the Plan does the best possible job of articulating this relationship based on existing information. As the recovery plan is implemented, additional information will become available along with new scientific analyses that can increase certainty about whether the threats have been abated, whether improvements in population and ESU status have occurred for the listed species, and whether linkages between threats and changes in salmon status are understood. These recovery criteria and the factors for delisting will be assessed through the adaptive management program under development for the Plan (discussed in the response to comment 74), and there will be a thorough review of the criteria at specified stages during implementation of the plan.

Recovery Goals

33. *Comment:* Many commenters asked when recovery would be complete. Other commenters asked how many fish would be enough, or asked for a specific recovery target. One commenter suggested that recovery would not occur during his lifetime, while another expressed concern that the recovery plan would be an endless make-work process without ever achieving recovery. A commenter stated that the time and cost estimates in the plan are not credible.

Response: The recovery goals for the Upper Columbia are expressed in terms of the VSP parameters of abundance, productivity, spatial structure, and diversity. NMFS focuses on these parameters for several reasons: 1) they are reasonable predictors of extinction risk, according to available literature; 2) they reflect general processes that are important to all salmonid populations, and 3) they are measurable. The recovery plan gives a specific value for each parameter for each listed population in the Upper Columbia Region. The plan has a monitoring component to measure the progress of the actions identified in the plan toward meeting these criteria. Delisting will occur when these criteria are generally met over an eight-year period.

34. *Comment:* Two commenters suggested that the plan lacks measurable, quantitative recovery criteria.

Response: NMFS disagrees. One of the strengths of the Plan is its strong reliance on the ICTRT recommended viability criteria. The Endangered Species Act requires that recovery plans for listed species contain “measurable and objective criteria” that when met would result in the removal of the species from the endangered species list. Draft criteria were provided as guidance to the recovery board during development of the recovery plan. The biological viability criteria were explicitly developed to inform long-term regional recovery planning efforts and delisting criteria. The viability criteria were based on guidelines in the NMFS Technical Memorandum, *Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units* (McElhany et al. 2000). Reports can be found at the following NMFS website: http://www.nwfsc.noaa.gov/trt/trt_ic_viability_survival.cfm. Also see response to question # 33.

35. *Comment:* On commenter suggested that metrics for recovery goals in the plan are not entirely consistent with TRT metrics.

Response: We recognize that there are some differences between the metrics used in the Plan and those developed by the ICTRT. For instance, we used 12-year geometric means for abundance and productivity while the ICTRT used 10 and 20 years. We will use the monitoring and evaluation plan to evaluate differences between metrics used in the Plan and those recommended by the ICTRT. In addition, the mechanism for addressing uncertainty in estimates of current status against the abundance/productivity criteria will also be evaluated in the M&E program.

Recovery Objectives:

36. *Comment:* A commenter suggested that recovery objectives are not clearly linked in the plan to impaired population characteristics.

Response: Although the Plan was written with the intention of making the issues clear to the lay reader, it is fundamentally a technical document. The primary impaired population characteristics for Upper Columbia spring Chinook and steelhead are small numbers of fish spawning in greatly reduced territory. Recovery objectives are stated in measurable terms – numbers of spawners, numbers of redds – and, in some cases, of returning fish to streams or reaches where they formerly spawned. The links between these objectives and the low numbers are given in terms of “limiting factors and threats” – standard terms in ESA recovery planning – that describe biological conditions limiting fish survival (the limiting factors) and the human activities or natural environmental processes that cause the limiting factors. More information on these relationships can be found in various publications on watershed restoration that are available through the Washington State Governor’s Office or other groups involved in watershed restoration.

Definition of Recovery:

37. *Comment:* One commenter claimed that viability, as defined by the ICTRT, does not equal recovery because it is different from language used in the 2000 Federal Columbia River Power System (FCRPS) biological opinion (BiOp), where, the commenter states, recovery was defined as a 50 percent or greater chance of recovery within 48 years.

Response: While the use of an “evaluation of the likelihood of recovery within 48 years” in the 2000 BiOp is different from the use of viability criteria in the recovery plan, language on page 1-14 of the 2000 BiOp explains that recovery goals for each ESU will ultimately be established using the viability criteria outlined in the VSP paper (McElhany et al. 2000). The same page further explains that recovery time periods must be determined by recovery planning.

38. *Comment:* The TRT commented that although the ICTRT’s viability criteria were not initially designed with re-classification as a potential use, the proposed classification criteria are

consistent with the intent of the VSP criteria, and do identify conditions that are substantially better than those currently seen in most populations today. In this sense, they may be useful guidelines for reclassification of the ESU from endangered to threatened.

Response: We agree. Because the Plan identifies conditions that are better than those currently seen in most Upper Columbia populations, NMFS Fisheries has decided to support the proposed re-classification standards.

Viability Criteria:

39. *Comment:* A number of commenters supported the general concept behind the VSP parameters but expressed concern about the TRT interpretation of VSP or about the application of the criteria in the plan. Some of the commenters disagreed with the use of minimum population thresholds, arguing that they are not supported by empirical evidence.

Response: The TRT's technical draft viability document is currently posted on the following website: http://www.nwfsc.noaa.gov/trt/trt_viability.cfm. This posting includes responses to a variety of technical and interpretation issues. The use of minimum population thresholds is a mechanism adopted by the TRT to ensure that each population had sufficient abundance to minimize the risk of genetic degradation due to small population size, the risk of Allee effects or other issues at low density, and the risk of loss of the population or important subcomponents due to random fluctuations in abundance.

40. *Comment:* One commenter suggested that although habitat degradation is mentioned a number of times in the plan as contributing to reduction in genetic diversity, there is no scientific evidence to support it.

Response: NMFS disagrees. The scientific literature is replete with evidence that habitat fragmentation and simplification contributes to reductions in genetic diversity because of fundamental changes in natural selective pressures within simplified environments. There also is ample evidence that the habitats of the Upper Columbia have been significantly altered from their historical conditions, and that Upper Columbia spring Chinook salmon and steelhead populations have very little genetic diversity. It is quite likely that habitat degradation is at least partly responsible for the lack of genetic diversity within these populations.

41. *Comment:* Two commenters pointed out that the plan fails to ensure that at least two populations meet criteria representing a 1 percent extinction risk. Both commenters suggested that a justification be provided for the deviation from the ICTRT recommendations.

Response: The ICTRT recommends a higher criterion for an ESU/DPS containing only one major population group (MPG), which is the case for both Upper Columbia spring Chinook and Upper Columbia steelhead. The ICTRT recommended, in that case, that at least two populations should meet abundance/productivity criteria representing a 1 percent extinction risk (99 percent probability of persistence) over a 100-year period (ICTRT 2005b ,p.46). The ICTRT considers the 5-percent extinction risk level "viable" and the 1 percent risk level "highly viable." The

UCSRB decided not to adopt this more recent recommendation; instead the Plan adopts the 5 percent extinction risk for abundance/productivity for all populations in the spring Chinook salmon ESU and all but one in the steelhead DPS.

NMFS accepts the UCSRB's recommended recovery (delisting) criteria, since they call for all known extant populations within the spring Chinook ESU and steelhead DPS to be viable. Furthermore, NMFS believes that it is not possible at this time to distinguish between the levels of effort needed to attain 99 vs. 95 percent probability of persistence; therefore, the Plan's actions would not change at this time in response to the ICTRT's more recently recommended criterion. Finally, NMFS will re-evaluate ESU and DPS status and the appropriateness of the recovery criteria in five years or less based on additional data from monitoring and research on critical uncertainties and could modify the recovery plan accordingly.

42. *Comment:* A commenter argued that the plan should separate its discussion of spatial structure from that of diversity.

Response: The commenter raises an important consideration about the relation of the two VSP criteria of spatial structure and diversity. The plan correlates these two parameters in development of actions to restore some spawning and rearing habitats, as the improvements in connectivity of fragmented habitats (a condition seen in some watersheds) can lead to improvements in both these parameters—hence their correlation. However, as the commenter notes, there may be specific actions that would address one parameter, but not necessarily the other. A likely example of this scenario would be modifications to specific hatchery programs that directly address the genetic diversity of some populations but would not necessarily have an impact on their spatial structure.

VSP:

43. *Comment:* One commenter pointed out that the plan “did a reasonable job of laying out current status for the four VSP parameters and identifying which VSP attributes were most limiting recovery in habitat.” The commenter suggested that spatial structure and diversity should be better characterized, consistent with the current status assessment in Appendix B. One commenter also mentioned that the decision not to aim for a low risk rating in spatial structure and diversity in any of the populations should be explained.

Response: NMFS appreciates the comment regarding the discussion of the VSP parameters, as this work required considerable public and scientific input. In discussions with the ICTRT, NMFS and the UCSRB decided that use of the abundance/productivity criteria can more directly inform recovery planners as to the relative magnitude of changes in survival and habitat capacity needed to achieve ESU/DPS viability. Spatial structure and diversity are also essential parameters in evaluating the long-term likelihood of survival; however, they are, of necessity, defined more qualitatively. Furthermore, while hatchery supplementation can be used to increase spatial structure, the presence of hatchery fish on the spawning grounds can result in a reduction in genetic diversity. This is at present an unresolved dilemma. The analysis of spatial structure/diversity in Appendix B of the plan is meant to be background information on Upper

Columbia spring Chinook salmon and steelhead; for more in-depth information, readers should refer to the ICTRT documents listed in the references at the end of this response sheet.

ICTRT Comments on the Recovery Plan:

44. *Comment:* The ICTRT suggested that the plan could be improved by incorporating a statement about achieving ESU-level viability as described by the ICTRT and by stating that updates and modifications of the plan in the future will review the incorporation of updated ICTRT viability criteria. The ICTRT also suggested that the plan include a brief paragraph describing ESU viability and how the joint population-level goals meet (or do not meet) ESU viability criteria.

Response: The Upper Columbia Recovery Plan included numerous citations to products on ESU-level viability, as described by the ICTRT. The primary intent of the Executive Summary of the Plan was to provide a brief explanation describing ESU viability criteria, and the means to address them. As stated in the response to comment 33, the VSP criteria were used as the metrics to evaluate the progress in meeting ESU level viability. NMFS will publish a companion document that describes a monitoring program for evaluating progress in meeting ESU viability criteria and the adaptive management procedures to modify plan implementation.

Criteria not doable:

45. *Comment:* A few commenters expressed concern that the levels of survival improvements suggested by the ICTRT were unrealistically high, beyond what habitat conditions can support, and would ensure that delisting would never be met. The comments called the survival improvement requirements unrealistic, too conservative, and draconian.

Response: Survival improvements necessary to meet viability criteria are very high, and reflect the low returns and extremely low productivity that Upper Columbia spring Chinook and steelhead have demonstrated in the relatively recent past. However, quantitative viability criteria recommended by the ICTRT do fall within the range of observed historical abundance for populations in the Upper Columbia, suggesting that they are not biologically unreasonable. Achieving those abundances will require improvements outside the habitat arena. For example, both steelhead and spring Chinook populations have substantial hatchery impacts that may affect productivity. Changes to mainstem, estuary or plume conditions should also be useful. Importantly, a critical component of the recovery plan is an adaptive management program that aims to identify the magnitude of response to actions, better describe the status of populations, and ultimately refine the suite of actions needed to meet viability criteria.

Concerns about the way that fish are counted:

46. *Comment:* A commenter asked why an estimated fish/redd ratio of 2.2 fish/redd was used to estimate spawning escapement, rather than the ratio of 2.4 fish/redd used by Mullan et al. (1990)

and the USFWS FRO Chinook spawning ground surveys (1994-current). The commenter points to a statement in the 1994 USFWS Entiat Chinook spawning ground survey that “the estimator of 2.4 Chinook salmon adults per redd is widely used and generally accepted in the mid-Columbia basin.”

Response: The revised estimate of 2.2 fish/redd is based on expanded counts from those used in the late 1980s and early 1990s. Recent spawning ground surveys include a greater frequency of site visits during the spawning season by a larger survey crew, and a greater spatial coverage in the surveys. Moreover, survey protocols are now established for the Upper Columbia Region, with adopted quality control and quality assurance standards for the data, resulting in a more reliable estimate of fish per redd.

Economic

Benefits of recovery:

47. *Comment:* A number of commenters disagreed with the estimates in the plan of the economic benefits of increased salmon harvest resulting from recovery, claiming that benefits were overstated, and that real costs of recovery would be much greater than the benefits of added harvest. One commenter granted that recovery might contribute to the economy, but argued that claiming the benefits of recovery would exceed the economic impact of traditional resource industries (agriculture) is “hogwash.” Another commenter pointed out that increased harvest would increase the time to recovery, achieving harvest benefits at the price of increased recovery costs.

Response: The estimates of costs for recovery actions were developed using standard and accepted methods based on previous actions at a local level. The ESA does not require an estimate of the economic benefits from the implementation of actions recommended in the recovery plan, nor does it require a comparison of economic benefits of salmon recovery to resource industries. Any statements to that effect were developed by the UCSRB, based on comments received from local stakeholders, particularly those who wished to have an expanded sport fishery for steelhead in the Upper Columbia Region.

48. *Comment:* One commenter disagreed with a statement in the plan that for each dollar spent on salmon recovery, thousands of dollars are generated for local, state, federal, and tribal economies.

Response: NMFS and the UCSRB agree with this comment and removed the statement from the recovery plan.

Cost of recovery:

49. *Comment:* A number of commenters suggested that the cost benefit analysis in the plan is not a robust, science-based social and economic analysis. One commenter requested that the

plan be updated using the more comprehensive and rigorous standardized methodology that NMFS uses when making ocean permit decisions. Another commenter argued that there was not enough detail given to understand why the total cost given for recovery increased dramatically from draft to draft. Two commenters suggested that the plan significantly underestimates the cost of recovery.

Response: Early drafts of the recovery plan that were provided for review had economic analyses that were partially completed, and therefore lacked the necessary rigor. To address this deficiency, the UCSRB hired a recognized consultant who conducted cost estimates for other salmonid recovery plans in the Pacific Northwest. The current draft of the recovery plan includes the refined estimates for habitat actions in the recovery plan, based on accepted methodology, with costs appropriate for site-specific actions in the local economy of the Upper Columbia Region. Please refer to the response to comment 87 for further information on this issue.

50. *Comment:* One commenter suggested that the plan did not take into consideration when it calculated costs the “almost \$5 billion in Federal funds” spent in the last 20 years on Columbia Basin salmon and steelhead recovery and at least \$165 million spent by the Washington State SRFB.

Response: The commenter is correct in that the plan did not calculate the past expenses to recover salmon and steelhead. The recovery plan only estimates the future costs to recover these listed species, based on the actions recommended in the plan.

Hatcheries

51. *Comment:* A few commenters asked when steelhead would be planted so that they could start fishing.

Response: Summer steelhead are released from hatchery programs in 3 of the 4 populations within the Upper Columbia River steelhead DPS. The Recovery Plan does not recommend steelhead releases into the one basin, the Entiat, where they are not currently occurring. The opening of fisheries specifically targeting hatchery steelhead may occur when the natural-origin steelhead return has met criteria established under ESA permit 1395, which has been in place since 2003. The release of hatchery steelhead does not, by itself, result in a fishery. Improvements in the productivity and survival of natural steelhead, such as those anticipated in the Recovery Plan, should lead to increased angling opportunities in the UCR region.

52. *Comment:* A number of commenters argued that hatchery-origin fish should be counted towards recovery. A common argument was that the DNA of hatchery-raised salmon is identical to wild salmon. Another argument made for hatchery fish was that before hatcheries started stocking the Okanogan River, Methow River, and Omak Creek, the populations in those areas were extinct, meaning that any wild fish actually come from hatchery fish. One commenter stated that NMFS had ignored the court’s ruling in Alsea by not counting hatchery fish in its delisting criteria.

Response: The delisting criteria for the Upper Columbia spring Chinook salmon and steelhead are based on the best available science, in which viable populations are defined as both self-sustaining and naturally reproducing in the wild. In the 2001 Alsea decision (Alsea Valley Alliance v. Evans, Sept. 10, 2001), U.S. District Judge Michael Hogan ruled that only entire ESUs or DPSs can be listed. If NMFS determines that hatchery fish are biologically part of a “distinct population segment,” and that distinct population segment warrants listing under the ESA, all members of the population must be included in the listing – both naturally spawned and hatchery fish. The court did not rule on how the agency should evaluate the species’ risk of extinction. In evaluating extinction risk, we must consider all the factors that contribute to viability, not just sheer numbers of fish.

Recovery depends on the abundance, productivity, spatial distribution, and diversity of natural-origin spawners. A “viable” population is defined as one that is self-sustaining in the wild and likely to persist over the next 100 years. All fish from naturally spawning parents (including the young from hatchery fish that spawn in upper Columbia River tributaries) are considered natural fish. However, first-generation hatchery fish that are released from hatcheries and return to the hatcheries to be “spawned” artificially, or even fish released from hatcheries that spawn naturally in the wild, do not establish recovery, because ESUs or DPSs that are dependent on hatchery fish are not considered viable in the long-term.

NMFS’ 1993 interim policy on artificial propagation of Pacific salmon stated that hatchery fish in an ESU should be listed only if they were deemed to be essential to the survival of that population. The 2001 Alsea decision called that policy into question. NMFS then modified its hatchery policy in accordance with the Court’s ruling. NMFS published its Final Hatchery Listing Policy in the Federal Register in June 2005.

In January 2006, NMFS reclassified the Upper Columbia steelhead DPS as threatened, reasoning, in part, that hatchery programs in the Upper Columbia Basin collectively mitigated the immediacy of extinction risk. However, on June 13, 2007, Judge John C. Coughenour of the U.S. District Court, Western District of Washington in Seattle, set aside NMFS’s 2005 Final Hatchery Listing Policy, based on the Court’s interpretation of the policy as mandating that status determinations be based on the entire ESU, including both natural and hatchery fish. The Court stated that status determinations must be made with the health and viability of natural populations as the benchmark. The Court also set aside the downlisting of the Upper Columbia steelhead DPS, reinstating the DPS’s endangered status.

On August 14, 2007, Judge Michael Hogan, the same federal district court judge in the 2001 Alsea case, issued a ruling upholding NMFS’s decision to list 16 Pacific salmon ESUs based on the 2005 Final Hatchery Listing Policy. In this case (Alsea Valley Alliance v. Lautenbacher), Judge Hogan upheld NMFS’s status review methodology, noting that “Congress did not specify how NMFS should conduct a species review.” The Court further stated that the ESA “does not require NMFS to treat natural populations and hatchery stocks equally.” Consistent with these authorities, the status of Upper Columbia steelhead continues as endangered, and NMFS is not required to rely on the mere number of hatchery spawned salmon in evaluating the DPS’s status.

See Salmonid Hatchery Inventory and Effects Report, NMFS 2004 (available at <http://www.nwr.noaa.gov/>) for an explanation of how hatchery fish are considered in determining the status of salmon and steelhead under the ESA, and for a detailed analysis of hatchery effects for every ESU on the West Coast.

53. *Comment:* One commenter suggested that spring Chinook should not be planted in summer Chinook habitat where spring Chinook are not native.

Response: The ICTRT determined that spring Chinook salmon were extirpated from the Okanogan basin. They did not conclude that spring Chinook never existed in the Okanogan basin. Restoring even a small naturally reproducing population of spring Chinook salmon in the Okanogan would expand the set of habitat and environmental condition supporting the ESU and contribute to the ESU viability.

54. *Comment:* A number of commenters disagreed with the use of hatcheries in the plan, pointing to lower productivity in first generation hatchery fish and risks of long-term impacts to the fitness of wild salmonids. One commenter called the plan “nothing more than a glorified hatchery program.” A commenter argued that only natural-origin spawners should be included in abundance estimates.

Response: In the upper Columbia, hydroelectric projects kill fish every year. Hatcheries are funded to mitigate for these losses. When salmon and steelhead have declined to dangerously low levels, hatcheries in some cases have been called upon to preserve genetic resources and reduce the short-term risk of extinction. Studies are underway to determine the effectiveness in the wild of salmon and steelhead produced under different hatchery practices. Results so far indicate a wide range in values for hatchery fish, from only 20 percent as effective as natural-origin fish to nearly 100 percent as effective. A study of the reproductive success of hatchery and natural-origin spring Chinook salmon is ongoing in the Wenatchee basin. Initial indications are that the spring Chinook salmon from the hatchery supplementation program are successfully reproducing and contributing to the number of smolts leaving the Wenatchee River. In the coming years, this study should provide insight into the benefits and risks of long-term hatchery programs.

55. *Comment:* A commenter argued that hatcheries are no substitute for healthy, abundant spawning and rearing habitat.

Response: NMFS agrees. Healthy, abundant spawning and rearing habitat is critical to having self-sustaining salmon and steelhead populations. Human encroachment and alterations to the natural landscape have been part of the settlement and development of modern society. Many human activities that have resulted in habitat degradation and loss of ecosystem function also provide societal benefits, such as the building and operation of dams for electricity. These are not likely to be reversed. One type of mitigation for the impacts of these activities on fish resources was artificial propagation of salmon and steelhead in hatcheries. The earliest purpose for hatcheries was to produce large numbers of salmon for harvest in commercial fisheries. Over the past few decades, the purposes and operations of hatcheries have further evolved to include rebuilding natural-origin populations, preserving genetically unique populations, and

reintroducing fish to areas where salmon populations have been extirpated. Evolution of hatchery practices over this period included the continual development and implementation of new practices shown to be successful in meeting specific hatchery program objectives. The success of hatchery programs to preserve salmon and steelhead populations is dependent on maintaining and increasing the availability of properly functioning habitats for every life stage.

56. *Comment:* One commenter suggested that the tremendous quantity of artificially propagated fish in this region together with all the other hatcheries on the Pacific Rim may exceed the carrying capacity of the region.

Response: The current combined number of natural and hatchery-origin juvenile salmon and steelhead entering the ocean from the Pacific Rim is less than estimates of historical natural production from the same area. However, the quality and quantity of habitat in the region has declined. Recent studies provide a basis for forming hypotheses regarding density-dependent effects caused by hatchery fish, but evidence for the effects of released hatchery fish on density-dependent processes is presently insufficient to guide management decisions over the appropriate scale of hatchery releases.

57. *Comment:* A commenter pointed out that in 2003 the ISAB found that no conservation benefit has been established for any hatchery program, that no hatchery programs are even monitoring for the correct parameters or with scientifically credible procedures to adequately establish any conservation benefit, that at least some artificial production programs almost certainly impose a large cost on the affected natural populations, and that scientific theory and evidence clearly indicate that even conservation or supplementation hatcheries pose substantial risks to wild populations.

Response: There has been a substantial effort in recent years to determine the benefits and risks of hatchery supplementation. Berejikian and Ford (2004) reviewed 18 studies published in both the peer-reviewed and gray literature. In addition, new information is emerging from research underway in the Wenatchee (for spring Chinook), in the Salmon River (for spring/summer Chinook), and in the Hood River (for steelhead). Based on available information, artificial propagation poses both benefits and risks. It is not correct to say that no conservation benefit has been established for any hatchery program. Araki et al. (2007), for example, conclude that it appears that a supplementation program can give a single-generation demographic boost to a natural population of steelhead trout without obvious short-term genetic consequences.

58. *Comment:* A commenter recommended that NMFS begin an analysis of how to better reconcile mitigation obligations with recovery planning, rather than being held to a smolt-release goal that evidence suggests will be incompatible with recovery.

Response: NMFS and the other co-managers will be working with the UCSRB implementation team to ensure that hatchery programs are operating consistent with recovery of ESA-listed populations. Results of research, monitoring and evaluation will also be used to adjust hatchery programs to improve each program's ability to achieve the program goals in a manner consistent with salmon and steelhead recovery.

Counting of hatchery fish:

59. *Comment:* A couple of commenters expressed concern that hatchery fish were not considered in productivity estimates, and that hatchery fish would not be counted towards recovery. One commenter suggested that not counting hatchery fish is contrary to the Hogan decision in *Alsea Valley Alliance v. Evans*.

Response: See response to question #52. We believe our Hatchery Listing Policy and its application are entirely consistent with the District Court's 2001 ruling in *Alsea Valley Alliance v. Evans*. The Alsea court ruled that if we determine that hatchery fish are biologically part of a "distinct population segment," and that distinct population segment warrants listing under the ESA, all members of the population must be included in the listing – both naturally spawned and hatchery fish. Furthermore, an application of the Hatchery Listing Policy to listing determinations was very recently upheld by Judge Hogan in *Alsea Valley Alliance v. Lautenbacher* (August 14, 2007).

General hatchery:

60. *Comment:* One commenter suggested that the plan should explain the long-term intent of hatchery programs: whether they will be phased out as recovery is achieved, or whether some will be maintained for harvest.

Response: Other documents, such as *Hatchery and Genetic Management Plans*, *ESA permit applications*, and *biological opinions* provide the long-term intent of hatchery programs. Many of these documents were used as references for the *Recovery Plan*.

61. *Commenter:* A commenter suggested that the use of local broodstocks should be considered in the context of ICTRT criteria.

Response: NMFS believes that the use of local broodstocks is consistent with the ICTRT criteria. ICTRT criteria for diversity include consideration for the rearing practices (including the use of local broodstocks) of hatchery fish, as well as the duration and intensity of their inclusion in the population. The use of local broodstock will affect the overall risk rating of the population; this impact should be monitored.

62. *Comment:* A commenter asked how and to what extent straying from in-basin and out-of-basin stocks will be addressed.

Response: The straying of hatchery fish from within-basin and out-of-basin hatchery programs will be addressed in a manner specific to each population or program depending on the level of risk posed by the straying fish.

Harvest

63. *Comment:* One commenter argued that harvest goals are contrary to ESA recovery. Three other commenters suggested that the harvest management strategies in the plan appear to be good. One commenter recommended that the harvest management strategies should be implemented, but to err on the side of rebuilding populations. Another commenter suggested that establishing harvest goals is perfectly compatible with recovery planning, but that reference should be made to the actions required to achieve those goals.

Response: It is NMFS policy that recovery of salmonid populations must achieve two goals: (1) the recovery and delisting of salmonids listed under the provisions of the ESA, and (2) the restoration of the meaningful exercise of tribal fishing rights. “It is the agency’s view that there is no conflict between the statutory goals of the ESA and Federal trust responsibility to Indian tribes” (Letter from Terry Garcia, Assistant Secretary for Oceans and Atmosphere, to Ted Strong, Executive Director, Columbia Inter-Tribal Fish Commission, July 21, 1998).

Additionally, we “will continue to join with states and tribes to develop a comprehensive approach to the restoration of fish and wildlife resources in a manner that fulfills all obligations under Federal law, including trust obligations to Indian tribes” (ibid.).

It has consistently been the view of NMFS that the “comprehensive approach to the restoration of [listed] fish” includes appropriately managed hatchery programs. Those programs, consistent with applicable standards and requirements, such as completed and reviewed HGMPs, are necessary to meet our legislative responsibilities under the ESA, the Magnuson-Stevens Sustainable Fisheries Act, and others, and Federal trust and treaty responsibilities.

The hatchery programs included in the Plan must be operated to be consistent with ESA protective requirements and supportive of habitat and harvest-directed recovery actions specified in the plans. As the condition of habitat improves, the need for mitigation will be reduced.

64. *Comment:* A commenter suggested that the discussion of harvest could be improved by the addition of a succinct summary of the total harvest each population receives, and where that occurs. Another commenter suggested an assessment of potential selective effects.

Response: NMFS agrees that such a summary would be very valuable. The Recovery Plan summarizes the impacts of fishing on an ESU level rather than a population level, based largely on the availability of data. Parsing out impacts to specific populations may not be possible because natural-origin fish are not distinguishable in fisheries outside the tributary basins that they return to.

65. *Comment:* A commenter argued that there seems to be an apparent circularity between the harvest and hatchery strategies, with large numbers of hatchery fish being released to support harvest, and harvest being implemented to remove surplus hatchery fish.

Response: Hatchery programs and harvest are often linked. Historically, hatchery programs were used to support harvest as a trade-off for actions, such as dam building and operation, that destroyed habitat and reduced harvest opportunities. Many current hatchery programs are operated to conserve natural populations, but the variation in survival rates from year to year

can result in too many fish in some years. In those situations, harvest is one way to remove surplus hatchery fish from spawning populations.

Fishing on the Entiat and Mad Rivers

66. *Comment:* 30 commenters asked that fishing be returned to the Entiat and Mad rivers. Impacts on local businesses from fishing closures, a desire to fish from private property on the river, and nowhere local for children to learn to fish were pointed to as reasons to restore fishing.

Response: Fishing opportunities are identified as long-term goals in many areas after minimum recovery criteria are met.

67. *Comment:* One commenter supported the restoration of salmon and steelhead in the Entiat and Mad rivers, but only as long as they remained closed to fishing, disagreeing with the economic intent of asking for a restoration of fishing on those rivers.

Response: The Recovery Plan includes long-term goals of opening fisheries only after minimum recovery criteria are met.

Steelhead

68. *Comment:* A number of commenters expressed concern over the use of separate DPSs of anadromous and resident *O. mykiss*. Concerns include the ability of anadromous and resident forms to interbreed, the occurrence of resident fish becoming anadromous and anadromous becoming resident, and a lack of sure knowledge about the degree of reproductive isolation between the two forms.

Response: The ESA requirement that a group of organisms must interbreed when mature to qualify as a DPS is a necessary but not exclusive condition. Under the definition, although all organisms that belong to a DPS must interbreed when mature (at least on some time scale), not all organisms that share some reproductive exchange with members of the DPS must be included in the DPS. The DPS policy outlines other relevant considerations for determining whether a particular group should be delineated as a DPS (i.e., “marked separation” as a consequence of physical, physiological, ecological or behavioral factors). The ESU policy relies on “substantial reproductive isolation” to delineate a group of organisms, and emphasizes the consideration of genetic and other relevant information in evaluating the level of reproductive exchange among potential ESU components. The DPS policy does not rely on reproductive isolation to determine “discreteness,” but on the marked separation of population groups as a consequence of biological factors. Given the marked separation between the anadromous and resident life-history forms in physical, physiological, ecological, and behavioral factors, we conclude that the anadromous steelhead populations are discrete from the resident rainbow trout populations within the ranges of the DPSs under consideration.

69. *Comment:* One commenter asked that the distinction between ESU (as used for spring Chinook) and DPS (used for steelhead) be better described in the plan.

Response: Despite the apparent reproductive exchange between resident and anadromous forms of steelhead (*O. mykiss*), the two life forms remain separated physically, physiologically, ecologically, and behaviorally (70 FR 67130). Steelhead differ from resident rainbow physically in adult size and fecundity, physiologically by undergoing smoltification, ecologically in their preferred prey and principal predators, and behaviorally in their migratory strategy. Given these differences, NMFS (70 FR 67130) proposed that the anadromous steelhead populations are discrete from the resident rainbow trout populations. Therefore, this plan only addresses the recovery of anadromous steelhead. Resident rainbow trout are not included in the recovery of steelhead. The USFWS requested that NMFS consider departing from use of the ESU Policy and evaluate *O. mykiss* population risk status through the DPS Policy. The major difference between the two policies is that under the ESU Policy, one delineation of whether a population is distinct is that they are “reproductively isolated” from other population segments. Within the DPS Policy, there only needs to be “marked separation” to satisfy population distinctiveness.

Implementation

70. *Comment:* One commenter urged policy makers to move forward with implementation, stating that needed revisions to the plan should not delay implementation of critical measures that have been identified in the various watershed chapters. They further stated that the region cannot afford further delay if it is truly committed to the goal of “providing abundant, productive, and diverse populations” of salmon, steelhead, and bull trout in the upper Columbia basin.

Response: We agree. The UCSRB and the NMFS continued to pursue funding of actions that would assist in recovery during development of the Plan. During the past two years, funding entities including the SRFB, BPA and PUDs funded projects found in the implementation tables (appendices M1, M2 and M3). The recovery plan will provide a strategy for recovery that will assist planners in developing future projects.

Just a guidance document:

71. *Comment:* Multiple commenters asked about the assertion of NMFS and the UCSRB that the Plan is a guidance document, and is not mandatory. One commenter suggested that this runs counter to the ESA requirement that NMFS “develop and implement” plans for the conservation and survival of endangered and threatened species.

Response: The salmon recovery plans are binding only on NMFS. They do not obligate any party other than NMFS. The ESA requires NMFS to develop recovery plans for all listed species, but the plans are not enforceable or regulatory. Rather the plans set goals and identify actions that would, if implemented, lead to recovery of the listed species. We will use the salmon recovery plans to help others focus their efforts most effectively to aid the fish. We hope these actions will be taken, but they are not in themselves enforceable as a result of the recovery plan.

Since the recovery plan, by itself, is not an “enforceable” document in terms of having the authority to require that certain actions are taken, NMFS recognizes that the best way for this plan to be successful is to have the support of those who are affected by it. This plan is based on the benefits of voluntary actions, and we strongly encourage that approach. Our hope is that a locally developed plan that is adopted by the local, state, tribal, and federal governments and supported by multiple stakeholders will fulfill the vision statement of the UCSRB and result in recovery of the listed species.

Site-specific actions:

72. *Comment:* Two commenters suggested that the actions listed in the recovery plan are too general to meet the ESA requirement to include site-specific actions.

Response: The UCSRB will rely on Watershed Action Teams (WAT) to prioritize and recommend site-specific actions through development of annual implementation plans. Projects recommended for support of the UCSRB must be consistent with Appendices M1 and M2 of the Plan and undergo rigorous review by the UCSRB’s Regional Technical Team. The recovery plan provides short and long term objectives and general actions for the hydro, hatcheries, harvest, and habitat sectors in Chapter 5. Appendices M1 and M2 provide detail of recommended actions by assessment unit for the four river basins. The actions apply to strategies for addressing limiting factors. NMFS believes that the level of detail provided in the Plan and the WAT process used to recommend projects for funding meet the intent of the ESA.

Relationship between goals and actions:

73. *Comment:* A commenter suggested that the goals for the populations and ESU need to be more clearly linked to the actions chosen. The commenter suggested that there appears to have been little effort to connect current status to key limiting factors and to identify actions that would address those limiting factors.

Response: Limiting factors were defined through EDT process. As described in the response to comment 24, many of the actions identified in the recovery plan were based on EDT modeling exercises conducted by the watershed planning units. The watershed planners used EDT to identify the potential for stream restoration actions based on the limiting factors identified for spring Chinook salmon and steelhead in each subbasin. This effort resulted in a systematically based assessment of conditions and a prioritization of restoration needs for each population. As described in the response to the following comment, monitoring and evaluation as part of the adaptive management program will be used to reevaluate the effectiveness of the actions and their relationship to the limiting factors previously identified.

74. *Comment:* A commenter suggested that a more robust and transparent adaptive management program is needed in the Plan.

Response: As stated in the response to comment 44, NMFS will release a separate publication in late 2007 on integrated effectiveness and status/trend monitoring for the Upper Columbia Plan. This publication will include an extensive adaptive monitoring program for all major strategies identified in the plan. Included in that adaptive management program will be periodic reporting dates on progress in meeting recovery goals, a decision tree for making informed and transparent decisions on changes to the recovery plan's implementation schedule, and well-defined indicators of effectiveness for each strategy identified in the Plan.

Relationship to FCRPS actions:

75. *Comment:* A commenter asked about the relationship between the UCSRB plan and the FCRPS BiOp, and expressed concern that tributary habitat actions from the recovery plan might be “double-counted” as mitigation actions under the hydrosystem plan. The commenter suggested that double-counting could also occur through implementation of the mid-Columbia HCPs.

Response: The recovery plan does not create a unique mitigation responsibility and so will not create an opportunity for “double counting.” The plan includes descriptions of classes of actions that are anticipated to be beneficial to salmon and steelhead that could be implemented through any of a number of available funding sources. It does not affect either the FCRPS BiOp or the mid-Columbia PUD HCPs. Pursuant to section 7 of the ESA, the FCRPS BiOp is expected to include lists of actions, all of which are likely already noted as appropriate in the recovery plan, which the action agencies under the FCRPS will be required to implement in whole or in part to mitigate for mainstem losses. Under the mid-Columbia HCPs, the PUDs satisfy their off-site habitat mitigation responsibilities simply by providing the required amount of money to a fund used at the discretion of a multi-entity committee to fund habitat actions. NMFS is aware of the potential that projects funded under the HCPs could be claimed as FCRPS actions and fully intends to ensure that the two programs are entirely additive of one another.

Habitat Actions:

76. *Comment:* Pointing to a 1989 report by Hillman et al. and one in 1992 by Mullan et al., two commenters suggested that the use of rocks as habitat should be given equal consideration with large woody debris in the plan.

Response: See response to comment 9. In addition, the plan does not preclude or dismiss the value of large rocks as elements of habitat restoration actions. NMFS agrees that in certain circumstances (e.g., where the channel is confined between revetments) rock structures may be appropriate. There is no need to modify the plan to address this comment as the plan does not recommend prohibiting the use of large rock as a habitat feature element.

77. *Comment:* Many different commenters asked about the benefits of aquifer recharge and positive influence on groundwater from the use of unlined irrigation ditches. A report by Mullan et al., advice from the State Hydraulic Engineer from the 1918 Beaver Creek adjudication (to

flood irrigate in the spring), and the existence of seep lakes and new creeks in the Columbia Basin were all pointed to as supporting a claim that irrigation “may be more beneficial than detrimental.”

Response: See response to comment number 9. It may be possible to use irrigation strategies to artificially charge shallow alluvial aquifers in a manner that could benefit late season stream flows. The commenters suggest that Beaver Creek may be such a place. However, the evidence on the ground strongly suggests the contrary. Flood irrigation was common in the Beaver Creek watershed until the last few years and the lower reaches of the creek went dry each of approximately the last 100 years. Currently, as a result of significant investments in improved conveyance and application technology, Beaver Creek flows year round in all reaches. Clearly flood irrigation and relatively leaky canals did not improve late season flow conditions in this 100-year-long experiment. It is clear that the commenters’ suggestion would only work in a place like Beaver Creek if the early season flood irrigation was linked to an attendant significant reduction in or the cessation of later season irrigation withdrawals – not likely a very popular option. Furthermore, throughout much of the Methow Basin (e.g., Methow River, Twisp River, Chewuch River, Wolf Creek, and Early Winters Creek) gage data clearly show that stream flows rebound by an amount, nearly to the gallon, identical to the quantities diverted, almost immediately after irrigation diversions are ended for the season. This suggests that whatever recharge may be occurring in these areas is returned relatively rapidly to the stream (i.e., there is no late season benefit from earlier irrigation). The Plan recommends further study of aquifer recharge in relation to irrigation.

78. *Comment:* One commenter suggested that actions in the plan should be prioritized within and between “Hs,” and that the actions chosen may not be the most appropriate for addressing all VSP parameters. The commenter also suggested that the implementation appendix should be incorporated more into the main body of the document.

Response: The best approach for prioritization of tributary actions will be the annual process developed by the Watershed Action Teams. The appropriateness of actions to address VSP parameters will be gauged through the annual WAT process and the corresponding UCSRB RTT technical review. Projects with the greatest positive impact on VSP parameters will have a higher potential for UCSRB support.

Analysis of effects:

79. *Comment:* Many commenters expressed concern about the amount of uncertainty with the effects of actions in the plan. One commenter argued that actions should not be initiated until their effects are understood. Another commenter suggested that the use of trend analysis to evaluate recovery would allow more definite statements about the effects of actions.

Response: In each case, the risks of inactivity must be weighed against the immediate uncertainties regarding the potential effectiveness of proposed strategies or actions. Often the most robust approach is to initiate actions to improve habitat conditions that can be generally linked to reductions in survival or capacity for the populations of interest, building in monitoring

and evaluation actions designed to detect responses and/or further validate key assumptions. An important part of a successful recovery strategy is building in a feedback loop – implementing the recovery strategy in a way that can be adapted as more information becomes available.

As an example, the general action strategies in the Plan are designed to respond to specific limiting factors across the life cycle of Upper Columbia salmonid populations. The construction and operation of hydropower dams on the mainstem Columbia has resulted in increased mortalities on migrants from the Upper Columbia tributary populations. The Plan incorporates action plans aimed at reducing those mortalities associated with passage through the Mid-Columbia PUD projects and the federal Columbia River dams.

A feedback mechanism for evaluating the effectiveness of actions relative to survival improvement objectives is an important feature of the program. At the tributary habitat level, the plan provides a framework for identifying and addressing key tributary limiting factors, in particular subwatersheds for each of the Upper Columbia salmonid populations. Highest priority factors are identified based on currently available watershed assessments and evaluation models. The approach in the plan relies on watershed groups working with regional technical experts to target actions to gain improvements in survival and capacity. This approach allows for continued adaptation of recovery efforts as additional information becomes available. That information will allow refinements to assessments resulting from additional field data, examples from recovery actions being monitored in other regions or additional modeling analyses. Perhaps the most effective hedge against uncertainties inherent in recovery efforts is to build in a strong monitoring and evaluation feedback loop. The combination of a regional technical team and watershed-specific implementation teams provides an opportunity to use feedback information to ensure that tributary habitat restoration and protection efforts are achieving desired results. It is very difficult to measure incremental changes in fish survival and capacity on the subwatershed level. The periodic check-ins called for in the Plan provide an opportunity for setting milestones to track progress on restoration/protection strategies for each population. At first, evaluation will be focused on whether habitat conditions are changing sufficiently with respect to fish objectives. That means assessing the amount of habitat that is improving, the degree of improvement, and the spatial distribution of improvements. As habitat changes are achieved, direct measures of fish performance (juvenile and adult life stages) could also provide important information for evaluating performance of the restoration strategies. Depending on the amount of intervention and particular opportunities to monitor fish production, some form of trend analysis could come into play as part of the adaptive approach.

80. Comment: One commenter acknowledged that the amount of uncertainty about the effects of actions just reflects the current state of science and is not a failure of the plan. That commenter argued, though, that the uncertainty should be appropriately acknowledged and addressed in the plan.

Response: NMFS appreciates the comments regarding uncertainty in some aspects of the Plan, and acknowledges that recovery actions should be directed toward those actions where there is a reasonable certainty of success. An important component of the integrated status/trend and effectiveness monitoring program is the gathering of empirical information on spring Chinook

salmon and steelhead in the Upper Columbia ESUs, and the types of actions that have the highest certainty of contributing toward their recovery.

81. *Comment:* A commenter suggested that while the assumptions about the effects of habitat actions were documented, no attempt was made to justify or validate those assumptions. The commenter suggested that qualitative descriptions of habitat conditions and how they negatively affect population parameters would be useful.

Response: NMFS agrees that more thorough, qualitative descriptions of habitat conditions in the Upper Columbia region would be useful and helpful to the readers of the Plan. Chapter 3, *Factors for Decline*, and Chapter 5, *Strategy for Recovery*, contain some descriptions of habitat conditions and the purpose of the proposed recovery actions. Habitat conditions are more thoroughly described in the watershed plans and subbasin plans that were drawn upon as information resources for the Plan. In the interest of limiting the bulk of the Plan as much as possible, such description was not fully elaborated in the writing of the Plan.

Changes to local ordinances, etc.

82. *Comment:* A few commenters asked about the responsibility of local governments to integrate the recovery plan into local planning efforts such as growth management, shorelines, and critical areas ordinances. Two commenters suggested that the recovery plan goes beyond ESA requirements by basing its recovery strategy on local government mandates.

Response: Local land use decisions will have a major influence in determining the success or failure of recovery efforts. The plan, however, neither obligates local jurisdictions to any particular course of action nor prescribes the outcome of any particular land use decision they might make. Local governments do have a responsibility in common with all citizens of the United States to avoid engaging in the unauthorized take of listed species. This obligation is a consequence of the ESA, however, not of the recovery plan. The commenters' assertions that the plan goes beyond ESA requirements and is based on mandates to local governments are incorrect.

Public involvement in implementation:

83. *Comment:* A commenter suggested that implementation efforts should be coordinated with other groups working in the same area in an effort to protect stakeholders' time and energy to avoid frustration and burn-out.

Response: We are very appreciative of local involvement and aware of the amount of time it takes for stakeholders to participate on the various teams and processes. Burn-out is always a concern. While we can't guarantee that all frustration will be avoided, we hope that the processes developed for implementation will be a rewarding experience. By participating in this Plan's development and implementation, stakeholders can help ensure that it makes sense, is practical, is based on local input, adequately addresses local concerns, and supports the local

economy while recovering species to the point where protection under the ESA is no longer required. The UCSRB and WATs will work closely with stakeholders to coordinate the efforts of groups working in the same area.

Funding

84. *Comment:* A number of commenters asked where funding for implementation of the plan will come from. One commenter expressed concern that starting implementation before funding is secured might result in “unfunded mandates,” while another commenter warned that looking to the public utility districts as a source of additional funding “is disingenuous and completely fails to recognize the very costly commitments for implementation and evaluation measures that the public utility districts have already made and which will be implemented and paid for by customers and ratepayers for the next several generations.”

Response: The Plan references over 400 actions and funding for many of the projects is a concern. Funding will often have to be secured on an annual basis and some higher priority projects may not be funded. The Public Utility Districts have been very supportive of recovery and are already tied closely into the funding of habitat projects and hatchery programs through Habitat Conservation Plans. A high priority for both the UCSRB and NMFS will be to secure funds for projects ranked high by Watershed Action Teams and the Regional Technical Team. Funding will be needed from a variety of sources, including Federal agencies, states, and the Public Utility Districts.

Legal

Comments suggesting legal failures of the plan and the planning process:

Several commenters disagreed with the conclusion in the Federal Register that the draft plan meets the requirements of the ESA because of the following four issues:

85. 1) *Comment:* The Plan fails to set forth criteria that if met would result in species being removed from the list.

Response: We disagree. The delisting criteria are clearly defined in Chapter 4 of the Plan. In addition, the monitoring and evaluation plan (scheduled for adoption later this year) will incorporate milestones for evaluating the status of the species and progress toward meeting the criteria. Also, see answer to question # 34.

86. 2) *Comment:* The plan's goals are based on unproven science. The commenter went on to state that diagnosis of the problem is not based on science that is related to the fish or the habitat in Okanogan, Chelan, and Douglas Counties. The lack of real science means that the Plan fails to set objective, measurable criteria that are needed to achieve recovery, which is a violation of the ESA.

Response: We disagree. One of the main tasks assigned to the ICTRT was the establishment of biological viability criteria and guidelines specific for Interior Columbia ESU/DPSs. The ESU/DPS level viability criteria consider the appropriate distribution and characteristics of component populations in order to maintain the ESU/DPS in the face of long-term ecological and evolutionary processes. The viability criteria were based on guidelines in the peer reviewed NMFS Technical Memorandum Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units by McElhany et al in 2000, the results of previous applications (e.g. Puget Sound TRT (2004), Lower Columbia/Willamette TRT (2003, 2006) and a review of specific information available relative to listed Interior Columbia ESU/DPS populations. The level of risk selected in this plan is consistent with VSP guidelines (McElhany et al., 2000), the conservation literature (e.g., NRC, 1995), and previous policy guidance that biological objectives based on a 5 percent (or less) risk of extinction over a 100 year period provide adequate benchmarks for use in assessing recovery (NMFS, 2005).

87. 3) *Comment: The plan does not set forth realistic cost estimates. The plan does not have accurate time and cost estimates to achieve the Plan's goal.*

Response: NMFS disagrees. The cost estimate for the plan was based on a compilation of the cost estimates for the individual actions identified in the plan. The estimates were based on analysis of costs from similar actions previously undertaken in the Upper Columbia Region. There were several actions in the plan that had no precedent in the region, so the plan interpolated costs from actions in other regions or costs from actions that were roughly analogous to the proposed actions in the plan. The plan also includes an estimate of some of the administrative and procedural components of implementation.

Although the cost estimates are specifically for the Upper Columbia Plan, NMFS convened the planners from several other salmon recovery areas to provide peer review of assumptions used in development of cost estimates. Further, NMFS worked with these recovery planning organizations to establish a standardized framework for development of cost estimates for the individual recovery plans, including the Upper Columbia Plan.

The Plan does have a projected time frame for implementation of actions identified in the Plan. The recovery planners solicited input from various stakeholder groups to identify the time frame for implementation of these actions.

88. 4) *Comment: NMFS has not fully considered comments submitted on the Plan.*

Response: We disagree. See answer to question #27. The UCSRB and the NMFS have taken very seriously the review of public comments and have incorporated all relevant comments into the Plan. A total of 163 revisions were made to the text in response to public comments submitted during the public comment period September 2006-February 2007. Most of these revisions clarified technical issues and improved the syntax of the document. In addition, Appendices 01, 02, and 03 provide UCSRB responses to public comments provided in January, 2005, April, 2005 and June, 2005, respectively.

89. *Comment:* One commenter stated that NMFS cannot adopt and rely upon methodology and models that are not congruent with reality. The commenter cited a recent case involving the Administrative Procedures Act, in which the 9th Circuit found that the government was "not permitted to adopt and rely upon a methodology without reasonably verifying its reliability."

Response: This recovery plan relied on scientific methodology and models that are well established in the scientific literature, are peer-reviewed, and are in widespread use. The limitations of the models were described in the text and in Appendices F and J. While NMFS recognizes, as was expressed by the UCFRB numerous times in the Plan, that the available methods and models are not perfect, they do in fact represent the best available scientific information at this time. As additional funding becomes available for research and monitoring, new information may clarify or dispel some of the uncertainties identified in the Plan.

90. *Comment:* One commenter stated that NMFS had ignored the court's ruling in *Alsea* by not counting hatchery fish in its delisting criteria.

Response: See response to Comment 52.

91. *Comment:* One commenter stated that NMFS is basing its recovery plan on local government mandates, despite the fact that NMFS states the Plan is voluntary. In addition, if NMFS tries to influence county and state planning, it would violate legal principles of separation of powers and federalism.

Response: As the Plan says, it is not mandatory on anyone – federal agency, state, tribe, local government, nor private individual. NMFS does not seek to nor purport to require anyone to carry out any of the recovery actions included in the plan. Far from imposing requirements on these governments and stakeholders or being a mandate on how they must use their authorities or spend their resources, the Upper Columbia Plan and all other recovery plans are roadmaps – NMFS' recommendation of goals and feasible, effective measures that will lead to the recovery of the listed species. NMFS has encouraged regional governments and interests to plan recovery strategies and measures, and to draft them into regional draft recovery plans. In doing this and in assuring that the regional recovery plans satisfy the requirements of the ESA, NMFS and the regional groups have "influenced" one another. Such reciprocal influence is inherent in cooperation. It is consistent with federalism, in which the federal and state governments interact as sovereigns. This is how the Plan has come about.

The commenter acknowledges that the Plan explicitly states that it is voluntary, and does not mandate any local government or individual to take any action. The commenter also cites passages of the Plan that say that a local government "must" do some regulation or other action. The context of these passages shows that the Plan is referring to requirements that those governments have under Washington state law, such as the Growth Management Act and the Shoreline Management Act. In planning for recovery, NMFS makes assumptions about what local governments will do to satisfy state requirements. The Plan is not saying that local governments must do anything to implement its goals, nor its recommended recovery actions.

92. *Comment:* One commenter stated that because a recovery plan is a major federal action, NMFS failed to comply with the National Environmental Policy Act of 1969 (NEPA).

Response: NMFS has determined that issuance of recovery plans under section 4(f) of the ESA is categorically excluded from review under NEPA (NMFS – NOAA Administrative Order 216-6, section 6.03e3(a)). The NOAA Administrative Order notes that “Preparation of [a] recovery plan pursuant to section 4(f)(1) of the ESA is categorically excluded because such plans are only advisory documents that provide consultative and technical assistance in recovery planning.” Implementation of recovery actions identified in a recovery plan is subject to analysis under NEPA.

93. *Comment:* One commenter stated that NMFS cannot use the recovery planning process to expand the scope of critical habitat. Because the plan contains actions in areas that are not designated as critical habitat, and calls for actions in areas where fish do not currently exist, the plan serves to expand NMFS’s jurisdiction and control over land that has not gone through the rigorous critical habitat process.

Response: NMFS is not intending to use the recovery planning process to expand the scope of critical habitat. However, it is possible that areas newly occupied by ESA-listed fish as a result of actions implemented after this writing could be designated during the next critical habitat review process. NMFS could have designated unoccupied habitats during the last critical habitat designation process. However, NMFS chose to list only occupied habitats as it did not want to presume the outcome of local recovery planning. Nothing in the plan expands NMFS jurisdiction or control.

94. *Comment:* One commenter stated that NMFS failed to properly conduct and provide an adequate energy effect analysis (Executive Order 13211). The concern was that the plan will have a significant impact on the cost of electricity, because it will increase requirements on hydro electric projects.

Response: Because the Plan is voluntary and does not require anything of anybody, it will not have any effect on the availability of energy. Any actions taken by state, federal, tribal, or local governments to further recovery are their own decisions, not required by the Plan. If and when those governments implement any recovery actions, they must do so in accordance with applicable state and federal law. This includes the requirements of the ESA, which are in no way affected by NMFS’ adoption of a recovery plan under ESA § 4(f).

95. *Comment:* One commenter stated that NMFS failed to properly conduct and provide an adequate takings analysis (Executive Order 12630). Many private property owners fear that the presence of an ESA-listed species or the designation of critical habitat on their land will result in restrictions of current or future activities on their land and subsequent loss of all or some of their property value. There also is concern that designation of critical habitat could render them susceptible to third-party/environmentalist-related lawsuits. Accordingly, the commenter said, NMFS’ “perfunctory” treatment of the private property rights and values with regard to the designation of enormous pieces of land and waters for critical habitat fully contradicts the letter and purpose of Executive Order 12630.

Response: Because the Plan is voluntary and does not require anything of anybody, there is no possible Fifth Amendment taking by its adoption. Since the Plan will not affect the legal uses of any property, there is no possibility of taking. Accordingly, no takings impact analysis is required by E.O. 12630.

The Plan will neither increase or decrease the critical habitat currently designated in the Upper Columbia River Basin, nor will it change the regulatory impact of present critical habitat. ESA § 7(a)(2) is the only ESA provision which regulates actions that may affect critical habitat. Consultations on proposed federal actions will continue, to consider those actions' impacts on critical habitat, independently of the adoption of the Plan and of any of its recommendations. Again, the Plan will not affect the legal use of any property.

96. *Comment:* One commenter stated that NMFS failed to properly conduct and provide an adequate federalism analysis (Executive Order 13132). Executive Order 13132 requires, among other things, that NMFS, pursuant to consultation with state and local governments, provide a federalism summary impact statement, which consists of a description of the extent of the agency's prior consultation with state and local officials, a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of state and local officials have been met.

Response: As discussed in the response to Comment 91, the Plan satisfies the principle of federalism. Because it does not require anything of state and local governments and their citizens, it does not affect the powers and authorities of Washington State, nor does it affect the balance of the sovereignties of state and federal governments. Accordingly, E.O. 13132 does not impose any obligation to consult with state and local officials (although, as discussed in the September 29, 2006 Federal Register Notice, NOAA did so extensively), nor to document the need for an Upper Columbia recovery plan.

97. *Comment:* One commenter stated that NMFS failed to comply with the Intergovernmental Cooperation Act (ICA) by not fully coordinating with local governments. The ICA requires that federal agencies take into account all viewpoints and objectives – national, regional, state, and local - in formulation, planning, and administration of programs and development projects.

Response: The Intergovernmental Cooperation Act, 31 U.S.C. § 6501 et seq., does not apply to the Plan. As discussed in the September 29, 2006 Federal Register Notice, however, NOAA has collaborated extensively with Washington and local governments, which played the major role in developing the Plan. The Act applies only to federal expenditures, such as grants and federal services to assist development programs and federal construction projects. The Plan does not contain any provision that promises or requires any federal expenditures.

98. *Comment:* One commenter stated that NMFS failed to comply with the National Historic Preservation Act. The National Historic Preservation Act requires, among other things, that Federal agencies consult with local governments if there is any potential for an adverse effect on a historic property.

Response: The National Historic Preservation Act, 16 U.S.C. §§ 470-470x., does not apply to the Plan. Because the Plan is voluntary and does not require anything of anybody, there is no potential for it to affect historic structures.

99. *Comment:* One commenter stated that NMFS failed to comply with the Farmland Protection Policy Act (FPPA) by not addressing the impacts on farmlands. The FPPA is intended to minimize the impact that Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. FPPA mandates that to the extent possible Federal programs should be administered to be compatible with state local units of government and private programs and policies to protect farmland. The lands proposed by NMFS to be included in the Plan include and would seriously and drastically affect both directly and indirectly substantial farmlands throughout the three counties.

Response: The Farmland Protection Policy Act, 16 U.S.C. § 4201 et seq., does not apply to the Plan. Because the Plan is voluntary and does not require anything of anybody, there is no potential for it to affect the conversion of farmland to nonagricultural uses.

100. *Comment:* One commenter stated that NMFS failed to properly comply with Executive Order 12866, Regulatory Planning and Review. Pursuant to this Executive Order, the agencies should seek input from local governments to minimize the regulatory burdens and harmonize Federal regulatory actions with related state, local, and tribal regulatory functions.

Response: Because the Plan is voluntary and does not require anything of anybody, it does not impose any regulatory burdens. Similarly, it does not conflict with state and local laws and regulations, nor does it affect their scope and effect. Therefore, the UCRP does comply with E.O. 12866, as amended on Jan. 18, 2007 by E.O. 13422.

101. *Comment:* One commenter stated that NMFS violated the Federal Data Quality Act (DQA). NMFS has not satisfied the “basic standard of quality” in the issuance and publication of its proposed Plan, has failed to do the required pre-dissemination review, and has not provided a sufficiently objective Plan as required by the Federal DQA. The primary concern was that NMFS had never subjected the Plan to a formal independent peer review.

Response: Although independent peer review of recovery plans is not required under the ESA, NMFS has had a longstanding policy and practice of inviting comments from knowledgeable scientists on draft recovery plans. A peer review of all significant aspects of this Plan was made by the ICTRT and provided to NMFS on January 29, 2007 at the conclusion of the public comment period. The Final Plan was modified to reflect concerns voiced by the ICTRT.

The ICTRT consists of scientists internal and external to NMFS and is intended to serve as an independent science group advising NMFS on recovery planning. The members of the ICTRT come from a variety of agencies, fields, and academic institutions and provide a heterogeneous viewpoint on the development of products or for reviews. The ICTRT chair is from NMFS’ Northwest Fisheries Science Center. The ICTRT developed two guidance documents on which to base the technical foundation of Interior Columbia recovery plans. The document “Independent Populations of Chinook, Steelhead, and Sockeye for Listed Evolutionarily Significant Units

Within the Interior Columbia River Domain” (available at http://www.nwfsc.noaa.gov/trt/col_docs/independentpopchinsteelsack.pdf), provides the background, analysis, and recommendations on the identification of independent populations of the seven ESUs of anadromous salmonids listed under the ESA in the Interior Columbia. The second document, “Viability Criteria for Application to Interior Columbia Basin Salmonid ESUs”(available at http://www.nwfsc.noaa.gov/trt/trt_documents/ictrt_viability_criteria_reviewdraft_2007_complete.pdf), summarizes the current draft of ICTRT viability criteria for application to Interior Columbia salmonid ESUs. The ICTRT reviewed the Plan on May 12 and August 25, 2005 for consistency with ICTRT guidance documents, and the Plan was revised in response to both sets of comments. In addition, the Plan was reviewed and revised in response to technical review comments from other Federal and Washington State agencies.

The TRT’s Interim Report on Viability Criteria (McElhany et al. 2003), which forms the basis for the recovery goals in the Plan, has also undergone peer review. The McElhany report has had three major revisions: May 2002, December 2002, and March 2003. The most comprehensive review of the TRT’s work took place on the May 2002 draft. It was sent out to 14 academicians, 13 agencies, and 14 NMFS scientists not affiliated with the TRT, and changes were incorporated based on comments. The December 2002 and March 2003 drafts were sent out for review to various co-managers.

In addition, during development, the UCSRB made the Plan available for extensive external and internal review, including review by NMFS staff experts, by the ICTRT and other independent technical reviewers, and by the public.

The planning process was an integrated process designed to meet several objectives, including ESA recovery planning and subbasin planning requirements under the Northwest Power and Conservation Council’s (Council) Fish and Wildlife Program. The subbasin planning process was integrated closely with recovery planning at the Columbia Basin level. NMFS worked with the Council to describe the relationship of subbasin planning and recovery planning, NMFS and Council staff worked together to develop a Technical Guide for Subbasin Planners, and NMFS worked with the Council in developing the peer review questions used by the subbasin plan peer reviewers so that the subbasin planning peer review would address NMFS’ needs for recovery planning.

The Independent Scientific Review Panel and Independent Scientific Advisory Board reviewed subbasin plans from June through August 2004. Subbasin Plans developed in the Upper Columbia Planning Unit were revised in response to these comments and subsequently adopted into the Fish and Wildlife Program of the Council in 2004.

The Plan was developed under funding and guidance of the Washington State Governor’s Salmon Recovery Office (GSRO). NMFS worked with the GSRO on a document (An Outline for Salmon Recovery Plans) to guide development of the Plan.

102. Comment: One commenter stated that NMFS has failed to comply with many laws triggering an Administrative Procedure Act (APA) violation. Under the APA, a federal court

may set aside agency action if it is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.

Response: NMFS disagrees that there is an APA violation. The Plan complies with section 4(f) requirements of the ESA and is based on facts and the best available science. Also, see NMFS response to question number 89.

103. Comment: One commenter stated that it is not appropriate for a recovery plan to prejudge how a species reintroduced to habitat where it had been extirpated should be treated under the ESA. NMFS should not approve a recovery plan that assumes that designation as an experimental population under ESA Section 10(j) is warranted for all populations that reoccupy historic habitat.

Response: There is currently a spring Chinook propagation program in the Okanogan subbasin through a cooperative agreement between NMFS, USFWS, Colville Tribes, and WDFW. This is an interim segregated program designed to support tribal ceremonial and subsistence fishing and provide information for a proposed, long-term integrated recovery program. NMFS supports the Plan's objectives and actions for reintroducing spring Chinook into the Okanogan basin. NMFS could determine that it is appropriate to propose Okanogan spring Chinook as an experimental population pursuant to ESA section 10(j). If so, NMFS would first issue a proposed rule for public comment. NMFS is not pre-determining the status of the population, nor the outcome of any prospective rulemaking.